

## ***ABSTRACT***

Livestock can be divided into two groups, small-size livestock and large-size livestock. Small-size livestock examples are rabbits, sheep, and goats. Large-size livestock example is cattle. Measure the weight of a small-size livestock more easily, while the large-size livestock was a little more difficult.

A cattle weight can be obtained by measuring the circumference of the chest and the length of each cattle. And the weight of the carcass itself ranged between 52-58% of the live weight of the cattle. The other way to measure the weight is using scales that assessed less efficient due to the size of the scales are fairly large and inflexible to carry around. To get a more practical way, technology can be implemented to help give alternative solutions to these problems. With image processing, the physical size of the cattle can be known in two dimensional pictures.

In this final project, the author discusses how to estimate the carcass weight derived from cattle. There are several methods that can be used to estimate this carcass weight. In this final project authors use Graph Partitioning methods with K-Nearest Neighbor (K-NN) classification begin with the preprocessing consists of resize operations and contrast stretching.

This final project research results obtained the value of estimated accuracy of the carcass weight is 82.19% with computing time 21,44 seconds. Expected with the capabilities of this system, can help the seller or the buyer to know the weight of the beef carcass in efficient way.

***Keywords : Segmentation, Graph partitioning, Classification, K-NN***